



NUCLEAR DIVISION

INTERNAL CORRESPONDENCE

November 5, 1979

APPROVAL FOR RELEASE

Document # Unnumbered 2-page ltr, DT Duncan to
Date
Title/Subject TG Fortney, dtd 11/5/79, CURRENT

STATUS OF LEAD USAGE AT ORGDP

Approval for unrestricted release of this document is authorized by the Oak Ridge K-25 Site Classification and Information Control Office, Martin Marietta Energy Systems, Inc., PO Box 2003, Oak Ridge, TN 37831-7307.

[Signature]
K-25 Classification & Information Control Officer

2/1/93
Date

T. G. Fortney, K-1003, MS 422

Current Status of Lead Usage at ORGDP

In the November 14, 1978 issue of the Federal Register, OSHA announced the issuance of a new standard for lead which became effective on February 1, 1979. In this standard, OSHA established a permissible exposure limit of $50 \mu\text{g}/\text{m}^3$ for airborne lead averaged over an eight-hour workday and forty-hour workweek. Types of lead included in the standard are metallic lead, all inorganic lead compounds, and organic lead soaps. Compounds not covered in this standard include all other organic lead compounds such as tetraethyl-lead found in gasoline. Industries most likely to be affected by the standard include battery manufacturing, lead smelters, lead refineries, lead shops, and steel workers who work with large quantities of lead on a daily basis. At ORGDP, no personnel are known to be exposed to excessive levels of lead based on an eight-hour workday and forty-hour workweek. Groups at K-25 which use lead or lead compounds include instrument mechanics, lab technicians, painters, welders, plumbers, and electrical mechanics. Soft soldering constitutes the largest group of personnel by far who work with lead. Most of the other activities are intermittent and involve few individuals.

It should be recognized that the presence of lead-bearing material or lead compounds in a work area does not necessarily confirm exposure on the part of the worker. Lead must be in such a form, and so distributed, as to gain entrance into the body. The primary route of exposure to lead is inhalation, with ingestion and skin absorption being insignificant for inorganic lead compounds.

The OSHA lead standard requirements for periodic environmental monitoring and medical surveillance apply only in cases where employees are exposed to airborne lead in excess of $30 \mu\text{g}/\text{m}^3$ averaged over the workday. Monitoring activities conducted by the Industrial Hygiene Department have shown no personnel exposures in excess of this value. Therefore, medical surveillance is not necessary for

No. 1134

T. G. Fortney
Page 2
November 5, 1979

compliance with the OSHA standard. However, it has become increasingly common to measure employee exposure to lead by means of biological determination. Since normal values for lead in urine and blood have been documented, urine or blood samples can be used for monitoring purposes. As a matter of good practice, eleven individuals from lead cutting and lead burning operations have been selected and placed on the Industrial Hygiene routine urinalysis monitoring program. This will help to assure continued compliance with the OSHA standard on lead.

D. T. Duncan, K-303-7, MS 328 (4-8623)

DTD:cyw

cc: Industrial Hygiene, K-303-7, MS 328 - RC
- File-DTD